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PLASTIC FOOD DISTRIBUTING CONTAINER,
DIVIDED TYPE PLASTIC FOOD DISTRIBUTING CONTAINER AND
5 PLASTIC FOOD DISTRIBUTING DEVICE

Technical Field

The present invention relates to a container that can store and
distribute a plastic substance such as soft serve ice cream and a distributing
10 device thereof.

Background Art

Conventionally, there are provided containers that can store and
distribute a plastic substance such as soft serve ice cream in Japanese
15 Laid-Open Patent Publication No.H10-502251 and Registration of Utility
Model No.2568808. Particularly, these approaches are characterized by
almost completely discharging a content food by deforming the same into a
flat shape through pressurization by providing the container with a thread
groove.

20 However, conventional methods required complicated works such
that a container for distributing plastic food such as the soft serve ice cream
is provided with the thread groove. Namely, it was for easily crushing the
container when distributing and for preventing the plastic food such as the
soft serve ice cream from staying inside after crushing.

25 There are also two methods for manufacturing the soft serve ice

cream composed of a plurality of components using a distributing container in the use of a conventional container.

First method is a method of previously injecting the cream composed of a plurality of components inside the distributing container and then distributing the cream from one distributing container. This method has an advantage that a distributing step comprises a single process. However, the method has had a problem that the soft serve ice cream is already mixed when distributing it, and thereby combination of mixture of the soft serve ice creams cannot be decided.

Second method is also a method of distributing one soft serve ice cream from a first distributing container and thereafter distributing the other soft serve ice cream composed of a different component using the first distributing container and the second distributing container containing one of a plurality of components respectively. In this case, combination of mixture can be decided when distributing the soft serve ice cream. However, the method has had problems that because a distribution is performed with the first distributing container and thereafter the other distribution is performed with the second container, it takes time for distributing and further time difference occurs in distributions of the first and second distributing containers.

Objects of the present invention are to provide a simpler container for distributing plastic substance such as soft serve ice cream and to further provide a container capable of determining combination of a plurality of plastic substances when distributing and thereafter distributing the plurality of plastic substances simultaneously and a distributing device thereof.

Disclosure of the Invention

In order to achieve the objects, a plastic food distributing container according to the present invention comprises a circular bottom portion provided with an opening, a side face comprising a circular-arc-shaped face, and a sword-guard-shaped portion protruded outwardly in a perpendicular direction to each side face, wherein the container is constituted so that wall thickness of the side face is smaller than that of the circular bottom portion and that the wall thickness of the sword-guard-shaped portion is larger than that of the circular bottom portion.

Also, the wall thickness of the circular bottom portion may be between 0.2mm and 0.5mm inclusive, and the wall thickness of the side face may be between 0.1mm and 0.3mm inclusive, and further the wall thickness of the sword-guard-shaped portion may be between 0.35mm and 0.55mm inclusive. Material of the container may be a hard-type thin synthetic resin such as polypropylene, polyethylene, polystyrene, polyvinyl chloride, ethylene-vinyl acetate copolymer, biodegradable resin, and high-density polyethylene or cold resistance grade thereof.

Further, a divided type plastic food distributing container for soft serve ice cream etc. according to the present invention comprises a half-moon-shaped bottom portion provided with an opening, a first side face comprising a flat face, a second side face comprising a circular-arc-shaped face, and a sword-guard-shaped portion protruded outwardly in a perpendicular direction to each side face, wherein the container is constituted so that wall thickness of the first and second side

faces is smaller than that of the half-moon-shaped bottom portion and that the wall thickness of the sword-guard-shaped portion is larger than that of the half-moon-shaped bottom portion.

5 This opening may be formed at the center of the half-moon-shaped bottom portion.

This opening may be formed in contact with the first side face from the center of the half-moon-shaped bottom portion.

The wall thickness of the half-moon-shaped bottom portion may be between 0.2mm and 0.5mm inclusive, and the wall thickness of the first and second side faces may be between 0.1mm and 0.3mm inclusive, and further the wall thickness of the sword-guard-shaped portion may be between 0.35mm and 0.55mm inclusive.

The material of this container may be a hard-type thin synthetic resin such as polypropylene, polyethylene, polystyrene, polyvinyl chloride, ethylene-vinyl acetate copolymer, biodegradable resin, and high-density polyethylene or cold resistance grade thereof.

And a divided type plastic food distributing container for the soft serve ice cream etc. according to the present invention comprises a sector form bottom portion provided with an opening, a first side face comprising a flat face, a second side face situating next to the first side face, a third side face comprising a circular-arc-shaped face, and a sword-guard-shaped portion protruded outwardly in a perpendicular direction to each side face, wherein the container is constituted so that wall thickness of the first, second and third side faces is smaller than that of the sector form bottom portion and that the wall thickness of the sword-guard-shaped portion is

larger than that of the sector form bottom portion.

The plastic food distributing device according to the present invention is provided with a pressing rod for pressing a plastic food and a container holder arranged with the divided type plastic food distributing
5 container.

Further, a plastic food distributing device according to the present invention comprises a pressing equipment comprising an upper pressing plate and a columnar pressing portion protruded perpendicularly at the center of the upper pressing plate, and a flat type container holder
10 comprising a lower pressing plate and a cylinder protruded perpendicularly underneath the plate, wherein the cylinder is provided with a circular opening at the center of the lower pressing plate and with a small circular opening at the center of a bottom plate of the cylinder.

The plastic food distributing device according to the present invention also comprises a pressing plate and a pressing portion protruded
15 perpendicularly from the pressing plate, and a cylindrical container holder provided with an upper opening and a bottom face and having a small opening at the center of the bottom face.

Further in these plastic food distributing devices, a groove may be
20 recessed in a diameter direction of the bottom portion of the columnar portion in the pressing portion and a partitioning plate may be arranged parallel to the groove at the center of the cylinder of the container holder.

Brief Description of the Drawings

25 Figure 1 is a structural view of a plastic food distributing container

of first embodiment according to the present invention.

Figure 2 is a structural view of a divided type plastic food distributing container of second embodiment according to the present invention.

5 Figure 3 is a structural view of a divided type plastic food distributing container of third embodiment according to the present invention.

Figure 4 is a bottom view of a plastic food distributing container of the first embodiment according to the present invention.

10 Figure 5 is a bottom view of a divided type plastic food distributing container of the second embodiment according to the present invention.

Figure 6 is a bottom view of a trisected divided type plastic food distributing container of fourth embodiment according to the present invention.

15 Figure 7 is a bottom view of a quadrisected divided type plastic food distributing container of fifth embodiment according to the present invention.

Figure 8 is a structural view of a container holder of the divided type plastic food distributing container of the first embodiment according
20 to the present invention.

Figure 9 is a structural view of a pressing equipment of the plastic food distributing container of the first embodiment according to the present invention.

Figure 10 is a structural view of a pushing device capable of
25 pressing only through a hand push operation according to the present

invention.

Figure 11 is a structural view of another pushing device capable of pressing only through a hand push operation according to the present invention.

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Best Mode for Carrying Out The Invention

In other detailed constitution of the present invention, advantages and features are made clear by embodiments described below in reference to accompanied drawings.

10 A distributing container 1 according to the present invention is constituted of a circular bottom face 2, a side face 4 perpendicular to the bottom face 2, and a sword-guard-shaped portion 6 which is protruded perpendicular to an end of the side face and parallel to the bottom face 2, and is provided with an opening 8 at the center of the bottom portion 2.

15 Wall thickness of the bottom face 2 is between 0.2mm and 0.5mm inclusive. The shape of the opening is reflected on a plastic food by forming a thick bottom face 2. Namely, when the shape of the opening is a star shape, the plastic food distributed from the distributing container is also the star shape. The wall thickness of the side face is between 0.1mm
20 and 0.3mm inclusive. By forming a side face of the wall thickness of 0.1mm or more, even though the container is filled with the plastic food, the container does not bulge. By forming a side face of the wall thickness of 0.3mm or less, the container can be easily crushed and further the container becomes almost flat when being crushed, thereby the wall
25 thickness of the sword-guard-shaped portion is preferably between 0.35mm

and 0.55mm inclusive. By forming the sword-guard-shaped portion of the wall thickness of 0.35mm or more, it becomes easy to seal the opening, and by forming the sword-guard-shape portion of the wall thickness of 0.55mm or less, it is possible to simultaneously form the side face thinner.

5 Figure 2 shows an embodiment of the case that the container is divided. In distributing containers 10 and 12 according to the present invention, a flat plate side face 16 erects perpendicular to a linear part of a half-moon-shaped bottom portion 14. While, an arcuate side face 18 erects perpendicular to a circular-arc part of the half-moon-shaped bottom
10 portion 14. The flat plate side face 16 and the arcuate side face 18 are respectively jointed at both ends perpendicular to the bottom portion 14. A linear sword-guard-shaped portion 22 is further protruded parallel to the bottom face at the side of an opening opposite to a bottom side of the flat plate side face 16. While, an arcuate sword-guard-shaped portion 20 is
15 protruded parallel to the bottom face at the side of the opening opposite to a bottom side of the arcuate side face 18.

In addition, the bottom portion 14 is provided with a star-shape opening 24 and any of the star-shaped openings are formed so as to abut on the linear part of the bottom portion 14.

20 Though material of the distributing container is not particularly limited, the material may be a hard-type thin synthetic resin such as polypropylene, polyethylene, polystyrene, polyvinyl chloride, ethylene-vinyl acetate copolymer, and high-density polyethylene or cold resistance grade thereof, wherein wall thickness is between 0.2mm and
25 0.5mm inclusive. A corn-based biodegradable resin or other

biodegradable resins may be also used. The wall thickness of the flat plate side face 16 and the arcuate side face 18 is preferably between 0.1mm and 0.3mm inclusive, and the wall thicknesses of the arcuate sword-guard-shaped portion 20 and the linear sword-guard-shaped portion 22 are desirably between 0.35mm and 0.55mm inclusive. The wall thickness of the bottom portion 2 is between 0.2mm and 0.5mm inclusive. By forming the container of the wall thickness of this size, the distributing container can be easily crushed after distributing soft serve ice cream and can be also prevented from bulging when filling the soft serve ice cream.

Such constitution enables the container according to the present invention to be arranged as two containers, compared to normally one columnar container, and also enables two kinds of the soft serve ice cream to be arranged and distributed simultaneously. The openings for pushing out the soft serve ice cream are provided adjacently, thereby the two kinds of the soft serve ice cream are allowed to come close to each other at the openings and to be distributed. Two kinds of soft serve ice cream can be mixed simultaneously, thereby when there are five kinds of soft serve ice cream, fifteen combinations are possible. In this regard, the soft serve ice cream is an example and the plastic food is not limited to this soft serve ice cream and the container can intend food having plasticity such as mousse, bavarois, and whipped cream.

Then, a distributing container of second embodiment according to the present invention is shown in Figure 3. Difference from the distributing container of the first embodiment is in arrangement of an opening 26. In the second embodiment, the opening 26 is arranged at the

center of the bottom face 6. Such constitution enables the soft serve ice cream to be distributed independently when distributing.

Figure 4 shows a bottom view of the distributing container illustrated in Figure 1, which is viewed from the bottom face. An opening 8 is shown at the center of the bottom face 2.

Figure 5 shows a view when the containers shown in Figure 2 unite. A bottom face and an opening are symbolized by 14 and 24, respectively. The end of the bottom face is shown by a line segment 15, and an abutting part of line segments in the openings is minimized.

Figure 6 shows a bottom view when trisecting a container. Openings 30 are shown on bottom faces 28 and border lines are symbolized by 29. Three combinations are possible. In the case of five kinds of soft serve ice cream, thirty-five combinations are possible.

Figure 7 shows a bottom view when dividing the container into four quarters. Openings 34 are shown on bottom faces 32 and border lines are symbolized by 33. In the case of five kinds of soft serve ice cream, seventy combinations are possible.

Further, Figure 8 shows a container holder 35 for pressing by arranging the distributing container according to the present invention. The container holder 35 is provided with an opening 38 on a bottom face 36 and the end of the container holder is provided with a cylindrical side face 40. In addition, a partitioning plate 42 is protruded perpendicular to the bottom face, thereby the container holder 35 is divided into two compartments.

Two distributing containers according to the present invention can

be fixed in a space of one normal distributing container.

The opening 38 is also on the bottom face 36, thereby the soft serve ice cream is allowed to be pushed out from the opening. These partitioning plates of the container holder are further formed for trisection or quadrisection, thereby a container holder suitable for the container
5 corresponding to them can be formed.

Figure 9 shows a pushing equipment 44 of a pushing device. The pushing equipment 44 is constituted so that an entire shape is columnar and so that a slit 48 perpendicular to a bottom face corresponding to the partitioning plates of the container holder is provided on the lower part,
10 thereby to press only the container arranged on the container holder without pressing the partitioning plate. Diameter of the pushing equipment 44 is almost the same as diameter of the plastic food distributing container, and the length of the pushing equipment 44 is larger than that of the plastic food
15 distributing container.

This pushing equipment can be used for other equally divided container holder by arranging the slit into trisection or quadrisection so as to correspond to the partitioning plates.

Figure 10 shows pushing device capable of pressing only by a hand
20 push operation according to the present invention. This pushing device is constituted of a pair of pressing equipment of a flat type pressing equipment 50 and a flat type container holder 52.

The flat type pressing equipment 50 have a columnar pressing portion 56 protruded downwardly in a perpendicular direction at the center
25 of the upper pressing plate 54 comprising a flat plate. A diameter of the

column is almost the same as the diameter of the plastic food distributing container and the length of the column is larger than that of the pastic food distributing container.

On the other hand, the flat type container holder 52 is provided with
 5 an opening 60 which is a size to be possible to insert the pressing portion 56 at the center of the lower pressing plate 58. Further, a cylinder 62 having the same shape as the opening 60 of the lower pressing plate 58 is arranged downwardly in a perpendicular direction. A bottom face 64 of the cylinder 62 is sealed and a small opening 66 is provided at the center of
 10 the bottom face 64.

A plastic food distributing container filled with soft serve ice cream is arranged on the cylinder 62 of the flat type container holder 60 of the pushing device capable of pushing out only by a hand push operation in the above constitution. The flat type pressing portion 56 is arranged from
 15 thereon. A user applies a pressure onto the distributing container of the soft serve ice cream inside the cylinder 62, however, interval between the upper pressing plate 54 and the lower pressing plate is reduced to complete applying presure , then the soft serve ice cream is pushed out from the small opening 66.

20 Figure 11 shows a pushing device capable of pressing only by a different hand push operation according to the present invention. The pushing device is constituted of a pressing equipment 68 and a container holder 70.

The pressing equipment 68 is constituted of a pressing plate 72
 25 comprising a flat plate, a pressing rod 74 connected perpendicular to the

pressing plate 72, and a pressing portion 76 of a columnar shape which is connected with the pressing rod 74 at the bottom face thereof. The diameter of the column is almost the same as that of the plastic food distributing container and the length of the column is larger than that of the plastic food distributing container.

While, the container holder 70 has an opening 78 and comprises a cylinder having a bottom face 82 at the bottom. A small opening 84 is provided at the center of the bottom face 82. This opening 78 and the cylinder 80 are formed into the sizes into which the plastic food distributing container and the pressing portion 76 can be inserted. A handle 85 for fixing the container holder 70 is provided on the opening 78.

In the above constitution, a plastic food distributing container where the cylinder 80 of the flat type container holder 70 of the pushing device capable of pressing only by a hand push operation is filled with the soft serve ice cream is arranged.

The pressing portion 76 is arranged from thereon. The user applies a pressure onto a distributing container of the soft serve ice cream within the cylinder 80, however the pressing plate 72 is then pressed, thereby the pressure is transmitted to the pressing portion 76 through the pressing rod 74 to complete the depression, then the soft serve ice cream is pushed out from the small opening 84.

In the pushing device capable of applying pressure only by a hand push operation such as Figure 10 and Figure 11, the slits are provided on the pressing portions 56 and 57 and a partitioning plate is provided on the container holders 62 and 80, thereby even a divided type plastic food

distributing container can be distributed.